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ABSTRACT

This two-part article examines the future of the U.S. campus and, by extension, implications for its design. It first discusses four key change agents facing U.S. higher education: technology-driven growth of information and communication, globalization, competition, and accountability. It then describes positive changes that are needed and already occurring in many areas of higher education in response to these pressures: adopting student-centered models, becoming more market driven, developing "centers of excellence," being a good neighbor, integrating technology through distance learning and wireless applications, designing for flexibility, facilitating social interaction, and implementing new accountability measures. (EV)

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Planning the Future of the American Campus

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Imperatives for Change in Higher Education

Planning the Future of the American Campus

By Prakash Nair

Prakash Nair

Background

Over the past few years, I have discussed how the school facilities in which most of America's children are educated are physical relics of a bygone era. I have also shown how, by clinging to the familiar physical model of school, we are showing our continued preference for a mass-production model of education in a world that demands a highly customized education for each child. In a piece I wrote for Education Week titled, But Are They Learning? (Nair 2002). I proposed that "misguided nostalgia" and not logic was dictating the way we develop environments for learning. Ending on a positive note, I pointed, hopefully, to the emergence of "new paradigm" schools as the wave of the future. This trend toward alternative types of learning places is best evidenced by the spread of specialized and charter schools and career academies and the ever-increasing numbers of students being home-schooled.

As these kinds of alternative environments gain currency, another popular perception of the school is also changing. Today's school is no longer seen always as a citadel removed from the life that goes on around it. Many communities are accepting, even demanding, schools that are more permeable – institutions that send students out into the community even as the school itself opens its own doors to welcome "outsiders" in as active partners in education.

One often hears the refrain that K-12 reform is a product of American universities. It is here that many new ideas are born and new schemes to improve learning unveiled. Many of today's leading educational thinkers are indeed university-based. Who will argue that Howard Gardner, Linda-Darling Hammond, James Comer and Tony Wagner are at the forefront of the K-12 reform movement? But even as K-12 reforms find a friendly home in the university, the American campus itself is undergoing a major identity crisis.

Higher Education – Imperatives for Change

The urgency to define a clear vision for America's higher education system has never been greater than it is today. Surprisingly, though, the impetus for reforms in America's colleges and universities does not seem to be driven by a need to improve quality, but rather, as a way to deal with their financial woes.

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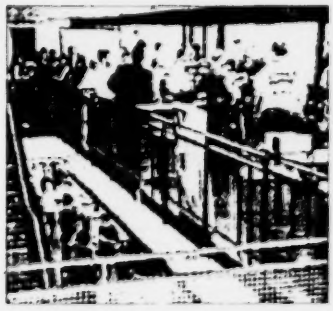

For many years now, the publicly funded colleges and universities have seen a steady decline in their government subsidies. Nobody has yet argued effectively that these cuts have reduced the quality of our higher education system. The primary reason for this seems to be that even the higher education institutions who know how quality suffers from budget cuts are reluctant to admit this, because if they do, they will be accountable for solutions. The issue is that real solutions to the problems confronting higher education are not just expensive, but require massive organizational and governance changes that scare conservative establishments. Therefore, they make incremental cuts instead to distribute the

pain. At the same time, they continue to use outdated indicators to measure success, such as the number of students graduated. Until there is a willingness on the part of the American higher education establishment to set up a completely different accountability system than the one they now have, American colleges and universities, like their K-12 counterparts, will continue on their road to irrelevance.

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In order to understand the future of the American campus and, by extension, implications for their design, it is important to look at what is happening in the world outside education. In this regard, there are four key change agents or trends that this country's higher education establishment needs to be mindful about. are:

1. **Technology-driven growth of information and communication:** It is safe to say that the biggest change to hit the world within the last decade with ramifications for education is the information and communication revolution. This revolution continues to be fueled by quantum leaps in technological advancement – mostly emerging from American corporations and, yes, American universities. However, far from guaranteeing the kind of economic supremacy that older technological advances had guaranteed the developed countries, today's advances seem often to have a chilling effect on the American job market even though multinationals are adding to their bottom line. To understand why this is happening, we need to look at the next trend which is globalization.

2. **Globalization:** Nobody can pinpoint exactly when it happened, but just as American industry began to lose ground with the global industrial marketplace, so too is the American service sector, long seen as the invincible 800-lb gorilla in the world of intellectual capital, now taking a beating with the growth of the global communications revolution. The loss of many intellectually-driven jobs from American shores to so-called developing countries like India and China is a direct byproduct of the Internet era. Underlying these two trends – the technological advances and, with it an acceleration of globalization - is competition.

3. **Competition:** The idea of increased competition is something that this country's higher education system has almost never had to contend with before. Today, in a global marketplace, education itself is becoming a commodity. In a fast-changing world, an important characteristic for the delivery of quality educational programs is agility. Agility to define and redefine program offerings to match needs. Again, something that is almost foreign to the way the larger institutions operate. While still a small movement today, competition may also come in the form of "virtual universities." For example, Capella University is a good example of a totally virtual university that charges about the same amount as many traditional universities but allows students to conveniently attend while holding on to full-time jobs (www.capella.edu). This is an important consideration as more and more poor and middle-income students are finding it impossible to pay the increasingly high costs of college (Ron Nissimov, Houston Chronicle, 1/13/03).

4. **Accountability:** As if these forces were not in and of themselves difficult to deal with, today there is a greater push for accountability from the public and from elected officials. The lack of adequate performance measures tied to funding hurts the higher education institutions financially and makes it more difficult for them to adjust to the many external factors discussed above. Another area in which accountability is being manifested is the support, or lack thereof, that higher education institutions get from their local constituents. While universities have always seen themselves as a

regional and national resource, there is an increasing reluctance on the of alienated local communities to support them in times of financial constraints. Not surprisingly, local community colleges often garner greater local support, partly because the quality of their services continues to improve and partly because they seek to serve the immediate needs of the communities around them. Because of this, they also find it easier to preserve their government funds than do universities.

Section 2 > designshare.com | January

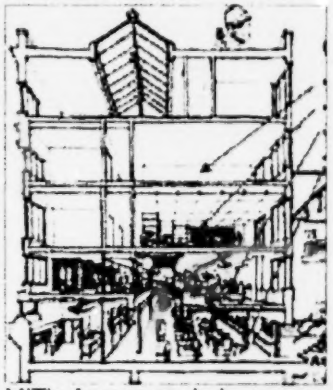
Imperatives for Change in Higher Education

Part Two: Responding to Change
Nine Cues for Campus Planners

"The American campus remains very much an instructor-centered plac

In the same way that the need for a personalized educational system has resulted in the creation of new paradigm schools at the K-12 level, so also, elements within the American higher education system have responded with actions and plans to deal with the changes in their world.

In the following segment, I will focus on the kinds of positive changes that are needed and already occurring in many areas within the college and university system in response to the pressures discussed above.



MIT's Aerospace Lab, an orga model that includes spaces to Conceive, Design, Implement Operate

1. **Adopting Student-Centered Models**: While higher education systems have traditionally boasted a higher level of "personalization" than the K-12 world, the American campus remains very much an instructor-centered place. It is important that universities begin to integrate the idea of multiple intelligences and brain-based learning in the way many schools have already done. That means not only building more flexibility into core curriculums, but also offering many different ways in which students can earn college credit. For example, the requirement to attend lectures may be dropped in favor of a system where students are offered online guidance both from instructors and peers. In this regard, The Pew Charitable Trusts has already funded an initiative at several universities that will deliver high enrollment introductory courses online. The success of this venture could lead to a rethinking of the very idea of large lectures – a mainstay at most universities.

   MIT's Aerospace Research Laboratory showcases how it is possible to create campus environments that are driven by the research about learning process. The factors that influenced the design of this facility include the belief that learning occurs all the time, that direct experience decisively shapes individual learning, that individuals learn by establishing and reworking patterns, relationships and connections and that change in the environment is stimulating. According to Randall Fielding, in his article "Personalized Learning in a Global Context, "From these premises, the team developed an organizing model that included spaces to Conceive, Design, Implement and Operate." (Fielding 2002)

   "The concept of providi "signature" programs is gaining strength within higher education. ...one institution has the Cent Excellence in the Creat Arts, another the Cente Excellence in Manufact and so on."

   At the MIT facility, which permits a highly individualized hands-on program, various media can be used both to deliver instruction and measure learning. The proliferation of such innovative learning strategies will provide an impetus for universities to move away from test-based assessments and toward portfolio-based systems. At the same time, the focus will begin to shift from what students know to what they can do. Of course, all these changes will have dramatic impacts on the way the campus itself is organized and that may be one reason why colleges will move slowly toward this idea of true customization of the learning experience for all students.

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2. **Becoming More Market Driven**: There is an old joke that an MBA is the process of making common sense difficult. While this is obviously an exaggeration, there is some truth that four-year degree programs include a lot of superfluous material not essential to the field of study or specialization. The idea of educating the "whole person" is good in theory, but it fails when such curriculums are made compulsory and become a requirement for graduation. Learning alternatives in the private sector, on the other hand, are market driven. They offer only what is needed to gain a particular skill that has current value in the world of work. That is why certifications from companies like Cisco Systems and Microsoft are often valued in the computer industry above a generic computer science degree from a good university.

   With the certification model, education becomes truly a lifelong endeavor, one that does not end with the awarding of the degree. This is a model that the Department of Engineering Professional Development at the University of Wisconsin employs very successfully. The market driven courses they offer both onsite and in other parts of the country are in great demand. Not only does UW benefit lifelong learners by employing this model, but it is also improving its own bottom line. Developing programs that builds this kind of currency of learning skills is what the higher education establishment needs to do more of.

3. **Developing "Centers of Excellence"**: In the K-12 world, large comprehensive high schools have already discovered that the two things wrong with them are that they are large and that they are comprehensive. A way of getting around the problem of anonymity of large, amorphous organizations is the idea of creating smaller, specialized "schools-within-schools" or, better still, independent "signature" programs, as with the School of Environmental Sciences (Zoo School) in Minneapolis or High Tech High in San Diego.

   Colleges and universities are also realizing that they can no longer be all things to all people and still retain their competitive edge. That is why the concept of providing "signature" programs is gaining strength within higher education. The Society for College and University Planning notes that the Center of Excellence concept is now in use in Tennessee and other states (Society for College & University Planning, National Planning Roundtable, 2002). Here's what they have to say, "Taking into account factors like historical mission, strengths and unique opportunities, Tennessee allocates resources to institutions to maintain or create distinction in certain programs. As a result, one institution has the Center of Excellence in the Creative Arts, another the Center of Excellence in Manufacturing, and so on. Oregon has similar Center of Excellence programs and also, a Targeted Investment Model that directs resources to selected university programs in an effort to achieve national status."

4. **Being a Good Neighbor**: Beyond the obvious need to garner local support to sustain government funding, higher education institutions are finding out that community and business partnerships are good for business and good for learning. By offering courses of interest to local community residents at times when the facilities are least used, a dual goal is met. One, the relevance of the institution is increased within the community and two revenues are increased without adding to infrastructure costs. Similarly, local businesses, as well as government and private institutions like hospitals, schools and day-care centers offer the higher education establishment many opportunities for mutually beneficial partnerships. Students can gain authentic learning experiences from such partnerships even as the institution strengthens local ties while increasing opportunities for philanthropic contributions and grant funding.

Facilitating social interactio
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5. **Integrating Technology – Distance learning:** Distance learning is only now coming into its own as a legitimate adjunct to the traditional on-site delivery of educational programs. With Internet II, already a mainstay at many campuses across America, will come unprecedented power to transfer information across global networks with full video and audio capabilities. Distance learning represents one important slice of the fast growing information and telecommunications technologies that have already changed the way we learn and the fundamental organization of business and industry.

   By accessing information from anywhere in the world and dispensing it to its constituents instantly, the university or even the local community college can broaden and strengthen its resource base by making it more and dynamic. Needless to say, the global outreach afforded students and staff allows local colleges and universities to develop world class partnerships and be competitive with the best universities in the world.

6. **Integrating Technology – Wireless**: Interestingly, the need for ultra high-bandwidth connections to support sophisticated technologies and high-fidelity video and audio transmissions across the world comes at the same time that there is an explosion in the spread of relatively low-bandwidth wireless appliances. Students in campuses across America are now enjoying the benefits of wireless connectivity. With the recent approval of a new high-speed wireless standard (IEEE 802.11a) , there is no question that, eventually, campuses that do not provide wireless connectivity will find themselves at a competitive disadvantage.

   Wireless is also a technology that will have a direct impact on the way campuses are physically arranged and used. With anytime, anywhere access to information comes an increase in student-directed learning and independent research. Such learning and research can now occur in the nooks and crannies of the campus as well as in libraries and labs, and this is something campus planners must be very cognizant of.

   Even as wireless extends the reach of learning opportunities beyond the boundaries of the classroom, it also changes the way the classroom itself is conducted. In the meantime, we are now in a period of transition in which the old and new paradigms of learning dwell uncomfortably side-by-side. Consider this excerpt from a recent New York Times piece on the effect of wireless computing in a typical lecture situation, "In a classroom at American University in Washington on a recent afternoon, the benefits and drawbacks of the new wireless world were on display. From the back row of an amphitheater classroom, more than a dozen laptop screens were visible. As Prof. Jay Mallek lectured graduate students on the finer points of creating and reading an office budget, many students went online to Blackboard.com, a Web site that stores course materials, and grabbed the day's handouts from the ether.

   But just as many students were off surfing. A young man looked at sports photos while a woman checked out baby photos that just arrived in her e-mailbox."

7. **Designing for Flexibility**: It is not yet clear to what extent distance learning and wireless technologies as discussed above will affect the total gross floor area needed on the campus. It is clear, however, that flexible building strategies need to be evaluated to account for the rise in new media and electronic instruction that are already beginning to replace traditional classroom instruction.

Emerging and growing fields like Tissue Engineering and Robotics may place new demands on facilities that are hard to envision today, but we know that buildings will be around a lot longer than transient technologies and today's curricular offerings. We have already seen how MIT has solved this problem by using the CDIO (Conceive, Design, Implement and Operate) Model to design its Aerospace Research Laboratory. This is a very robust model that will remain viable even as technology and equipment changes. Other concepts such as the design of open plan, sub-floor systems which permit infinite variations of the workspace, interior partitions and interior equipment need to be evaluated. Today, technology is often an afterthought in buildings and tends to be superimposed after the fact. Good planning from the ground up will allow buildings to "bend" and better prepared to accept new and emerging technologies.

8. **Facilitating Social Interaction**: As technology takes over many of the so-called "formal" learning functions, universities will find themselves more and more a center of social interaction and other forms of "informal" learning opportunities. This will increase the need for plans to provide for lounges, meeting rooms, plazas, reading cafes, green zones and other attractive open areas for informal interaction and exchange of ideas. In the design of the award-winning Canning Vale campus in Western Australia, I stressed to our architects the importance of the "spaces between buildings". That campus was designed with several "learning neighborhoods" organized along a "learning street" where much of the informal learning would take place.

9. **Implementing New Accountability Measures**: Reforms in all the above areas has the added benefit in that they provide improved opportunities for new accountability measures. They address goals that are important to elected officials and the public but they do so in a manner that preserves the fundamental purpose of higher education – to provide the best opportunities for a relevant, high quality education. Higher education institutions have to show their constituents that they are not just a "community of learners" but a "learning community" whose benefits accrue to local neighborhoods and the region in which they are located. Such benefits need to be measured not only in economic terms, but also in terms of the increased social and cultural value that accrues to local communities from the presence of the higher education institution.

Conclusion: Despite an anticipated national growth in higher education enrollment of about 1.5 million over the next 15 years, there is no anticipation that hundreds of new campuses will be born in the United States during this period. Therefore, the challenge for campus planners everywhere will be to preserve America's rich tradition of excellence in this period of growth while responding innovatively to the inexorable forces of change discussed here.

< previous section

About Prakash Nair, RA, F

Prakash Nair is an internatic recognized professional in tl areas of innovative school fa and educational technology. the Founder/President of Pr Nair Consulting, an award-winning, international schoo planning firm. Before that he served for ten years as Dire Operations for a multi-billion school construction progran New York City. His many art on designing educational fac that will endure well into the century have been internatic published in print and on the Internet. He has also been interviewed many times in p radio and television.

Prakash has been invited by organizations and governme a consultant and as a keyno featured and professional sp on the subject of innovative schools and educational technology in 16 states and countries on four continents. Prakash can be reached at Prakash@DesignShare.com

designshare.com | January

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